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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/197,012	11/20/1998	DANIEL B. ROITMAN	10981133-1	9808

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EXAMINER

GUHARAY, KARABI

ART UNIT PAPER NUMBER

2879

DATE MAILED: 10/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/197,012

Applicant(s)

ROITMAN ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Amendment F, filed on July 22, 2002, has been entered and also Amendment E, filed on June 10, 2002, has been entered.

Applicant in the beginning of the Amendment F, page 2, indicated that claims 7, and 15-23 are cancelled, while on page 3, applicant indicate that claims 15-28 has been cancelled.

However, it is understood that Claims 7, and 15-28 have been cancelled. Claims 1-6, & 8-14 are pending in the application.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 1-6 & 8-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jones (US 5920080).

Regarding claim 1, Jones discloses an organic light emitting device (10 of Fig 4) comprising an electrode (an injection enhancing layer, Al+ Li , Mg+Ag layer over the transition layer 203, not shown in figures, see lines 56-60 of column 8), a conducting layer (202, 252 of Fig 4, lines 14-15 of column 9, lines 39-41 of column 8) a conductive current self-limiting structure (203, 253 of Fig 4, lines 43-49 of column 8, semiconductor layer 203 comprises barium titanate and also comprises Cr, or other metals, thus conductive) between the electrode and the conducting layer (202) and an organic stack (300 of Fig 5, lines 10-12 of column 9) adjacent said electrode and separated from the conductive current self limiting structure (203) by the

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conductor (the injection enhancing layer is over the transition layer 203, thus injection enhancing layer lies between organic stack and the current self limiting layer 203).

Regarding claim 2, Jones discloses that the current self-limiting structure (203 of Fig 4) resides in contact with the electrode (injection enhancing layer, see line 56-59 of column 8).

Regarding claim 3, Jones discloses that the current self-limiting structure (253 of Fig 4) applied as a patterned lattice structure over the electrode (lines 21-22 of column 7, see Fig 8).

Regarding claim 4, Jones discloses that the current self-limiting structure (203) is applied as a grid defining windows in which the electrode (202 of Fig 4) is applied.

Regarding claim 5, though Jones does not specifically mention that the current self-limiting structure (203 of Fig 4) comprises an anisotropically conductive material, it is inherent since Jones used barium titanate as the current limiting component, which is an anisotropically conductive material (see US 5414403).

Regarding claim 6, Jones discloses a photoresist material in contact with the electrode (injection enhancing layer on top of transition layer) and the current self-limiting structure (203 of Fig 4, see lines 51-54 of column 8).

Regarding claim 8, Jones discloses that the conducting layer (202 of Fig 4) is embedded within the current self-limiting structure (203 of Fig 4).

Regarding claim 9, Jones discloses that the conducting layer (252) resides over the current self-limiting structure (253, see Fig 4).

Claim 10 recites essentially the same limitation of claim 1. Thus claim 10 is rejected as claim 1 (see rejection of claim 1). In this case, Jones does not explicitly specify that the organic

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light-emitting device has increased the reliability. But it is inherent since Jones uses current self-limiting component in the device.

Claim 11 recites essentially the same limitation of claim 2. Thus claim 11 is rejected as claim 2 (see rejection of claim 2).

Claim 12 recites essentially the same limitation of claim 3. Thus claim 12 is rejected as claim 3 (see rejection of claim 3).

Claim 13 recites essentially the same limitation of claim 4. Thus claim 13 is rejected as claim 4 (see rejection of claim 4).

Claim 14 recites essentially the same limitation of claim 5. Thus claim 14 is rejected as claim 5 (see rejection of claim 3).

Response to Arguments

Applicant's arguments filed with amendment F, filed on July 22, 2002, have been fully considered but they are not persuasive.

Applicant again argued that "Jones fails to anticipate that the transition layer 203 could behave as a current self-limiting structure because it could never be a true conductor". Here applicant is contradicting its own admission that barium titanate is a current self-limiting structure (page 6, lines 4-6 of the instant specification).

Applicant further argued in Amendment D, filed on February 26, 2002, that the barium titanate layer is too thin to provide current self-limiting function. In this argument, applicant basically admits that barium titanate basically has a current self-limiting function.

Applicant's second allegation is that the prior art *high dielectric material barium titanate does not allow conduction*, thus *could never be a true conductive layer in the first instance* and

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also alleged (see remark, page 9, lines 21-22 of fourth Response) that *nowhere in the prior art is the transition layer 203 described as a conducting structure.*

Regarding this, first of all examiner wants to points out (also see rejection of claim 1) that the prior art teaches that the transition layer 203 is a semiconductor layer doped with inorganic conductive particles (see lines 45-49 of column 8). Thus prior art transition layer 203 is indeed conductive.

Moreover, in order to provide further evidence that barium titanate layer doped with conductive material is a well known material for a current self-limiting structure, examiner respectfully draws attention to a reference, US patent # 5414403, which teaches that current limiting components have resistance material having PCT behavior, such materials are a ceramic, based on doped barium titanate (material for Jones' transition layer 203) or an electrically conductive polymer (also mentioned in applicant's specification, as a suitable material for current self limiting material).

In response to applicant's further allegation that the feature of *a current self-limiting structure located between an electrode and a conducting layer, where the organic stack is located adjacent the electrode and separated from the conductive current self-limiting structure by the electrode*, please see rejection of claim 1 above.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is (703) 305-1971. The examiner can normally be reached on Monday-Friday 7:30 am - 4:00 pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.G

Karabi Guharay
Patent Examiner
Art Unit 2879



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